

1 What is claimed is:

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3 1. A hinge for positioning a left panel and a right panel, the
4 hinge comprising,

5 an inflatable bladder for encapsulating an inflation
6 material,

7 a top film extending between the left and right panels and
8 encapsulating a curing resin, and

9 a bottom film extending between the left and right panels,
10 the top film and bottom film are circumferentially disposed
11 about the bladder, the top film having a top circumferential
12 length, the bottom film having a bottom circumferential length,
13 the top and bottom circumferential lengths for angularly
14 positioning the left and right panels.

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16 2. The hinge of claim 1 further comprising,

17 a flex circuit extending from the left panel and around the
18 bladder for electrically routing power from the left panel.

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21 3. The hinge of claim 1 wherein,

22 the inflation material is a sublimation powder disposed in
23 the bladder for inflating the bladder.

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26 4. The hinge of claim 1 further comprising,

27 a reflective coating disposed on the bladder for reflective
28 UV light into the curing resin.

1 5. The hinge of claim 1 further comprising,

2 a left frame for securing the left panel to the top film and
3 to the bottom film and to the bladder, and

4 a right frame for securing the right panel to the top film
5 and to the bottom film and to the bladder.

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7 6. The hinge of claim 1 further comprising,

8 a left frame for supporting the left panel to the top film
9 and to the bottom film and to the bladder,

10 a left adhesive layer for securing the left frame to the
11 left panel and to the top film and to the bottom film and to
12 the bladder,

13 a right frame for supporting the right panel to the top film
14 and to the bottom film and to the bladder, and

15 a right adhesive layer for securing the right frame to the
16 right panel and to the top film and to the bottom film and to
17 the bladder.

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19 7. The hinge of claim 1 further comprising,

20 a flex circuit extending from the left panel and around the
21 bladder for electrically routing power from the left panel,

22 a plurality of ground pads disposed on the top and bottom
23 films,

24 a plurality of extensions comprising conductive traces
25 extending from the flex circuit to the plurality of ground
26 pads, respectively, for distributively grounding the hinge.

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1 8. The hinge of claim 1 further comprising,

2 a flex circuit extending from the left panel and around the
3 bladder for electrically routing power from the left panel,

4 a plurality of ground pads disposed on the top and bottom
5 films and disposed on and under the left and right panels, and

6 a plurality of extensions comprising conductive traces
7 extending from the flex circuit to the plurality of ground
8 pads, respectively, for grounding the hinge.

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10 9. The hinge of claim 1 further comprising,

11 a flex circuit extending from the left panel and around the
12 bladder for electrically routing power from the left panel, the
13 left panel being a solar cell panel comprising a silver contact
14 and a thin film solar cell, the flex circuit comprising a
15 conductor trace connected the silver contact for routing power
16 from the left panel and around the bladder.

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18 10. The hinge of claim 1 wherein the curing resin is cured by
19 exposure to UV light, the hinge further comprising,

20 a coating disposed over the top and bottom films for passing
21 UV light and for conducting static electrical charge.

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24 11. The hinge of claim 1 wherein the curing resin is cured by
25 exposure to UV light, the hinge further comprising,

26 a transparent coating disposed over the hinge for passing UV
27 light and for conducting static electrical charge, the coating
28 comprising indium tin oxide and magnesium fluoride.

1 12. The hinge of claim 1 further comprising,

2 a flex circuit extending from the left panel and around the
3 bladder and comprising a trace conductor for electrically
4 routing power from the left panel having a electrical contact
5 and around the bladder, and

6 a wrap around contact for electrically connecting the
7 electrical contact and the trace conductor.
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11 13. A hinge for positioning a left panel and a right panel, the
12 hinge comprising,

13 a top film for encapsulating a curing resin, the curing
14 resin cured by exposure to UV light, the top film having a top
15 circumferential length for defining the position between the
16 left and right panels, and

17 a coating disposed over the top film for passing the UV
18 light for curing the curing resin and for static discharge
19 protection of the film.
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22 14. The hinge of claim 13, the hinge further comprising,

23 a bottom film, the top film and bottom films are
24 circumferentially disposed about the bladder, the bottom film
25 having a bottom circumferential length, the top and bottom
26 circumferential length defining the position between the left
27 and right panels,
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1 15. The hinge of claim 13, wherein,

2 the coating comprises indium tin oxide and magnesium
3 fluoride.

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5 16. A hinge for positioning a left panel and a right panel, the
6 hinge comprising,

7 a curing resin,

8 a top film coupled to the left and right panels and for
9 encapsulating the curing resin, the curing resin being cured by
10 exposure to UV light, the top film having a top circumferential
11 length for defining the angular position between the left and
12 right panels.

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